Chemistry 141 - 4076 Name .

Dr. Cary Willard

Quiz 5A (20 points) October 1, 2007

* specific heat of ice 2.06 J/goC 0.91 kJ/moloC
* specific heat of water 4.184 J/goC 7.54 kJ/moloC
* specific heat of steam 2.0 J/goC 0.92 kJ/moloC
* heat of fusion 333 J/g 6.01 kJ/mol
* heat of vaporization 2226 J/g 40.67 kJ/mol
1. (10 points) A 0.1964 gram sample of quinine (C6H4O2) is burned in a bomb calorimeter that has a heat capacity of 1.56 kJ/oC. The temperature of the calorimeter increases by 3.2oC. Calculate the energy of combustion on quinine per gram and per mole.
2. (10 points) A piece of ice at 0oC was put into a beaker containing 350.0 grams of water at 74.6oC. If the temperature of the water dropped to 38.5oC, what mass of ice was put in the beaker?

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Quiz 5B (20 points) October 1, 2007

* specific heat of ice 2.06 J/goC 0.91 kJ/moloC
* specific heat of water 4.184 J/goC 7.54 kJ/moloC
* specific heat of steam 2.0 J/goC 0.92 kJ/moloC
* heat of fusion 333 J/g 6.01 kJ/mol
* heat of vaporization 2226 J/g 40.67 kJ/mol
1. (10 points) A 0.1964 gram sample of quinine (C6H4O2) is burned in a bomb calorimeter that has a heat capacity of 1.65 kJ/oC. The temperature of the calorimeter increases by 3.5oC. Calculate the energy of combustion on quinine per gram and per mole.
2. (10 points) A piece of ice at 0oC was put into a beaker containing 450.0 grams of water at 74.6oC. If the temperature of the water dropped to 38.5oC, what mass of ice was put in the beaker?